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BOTANICAL GAZETTE.

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OROBANCHE MINOR, IN NEW JERSEY.—In the early part of June I collected near Haddonfield in New Jersey, about five miles from Camden, a specimen of *Orobanche minor*. This plant has been on my mind for a long while, as I had seen a few specimens that were said to have been collected in this vicinity some years ago. The addenda to the last edition of Gray's Manual mentions it, as having been found "in the vicinity of Washington, and has been met with in New Jersey; but it may not long abide." As is well known this class of plants are parasites on the roots of other plants, and this species is mentioned as being parasitic on clover. It is a native of Europe where it is one of the widest spread species, extending into Asia. The finding of a single plant was an occasion for me to rejoice, but about an hour later I detected it in great abundance, hundreds if not thousands of specimens within a space of two or more acres. The owner of the property states that this is the second year he has noticed it in the yard attached to his dwelling, but could give no reason for its presence there. The ground had not been disturbed for years; no grass seed had been recently sown, nor fertilizers applied, whereby the seed could have been introduced; it seems, therefore, very singular that it should appear in such abundance and from no ascertainable cause. The height of the specimens varied from three inches to two feet two inches, and only in this extraordinary size does it differ from the European plant. The parasitic habit was easily determined, and generally was found attached to the roots of *Trifolium pratense*, sometimes, however, on *Trifolium repens* and *Poa pratensis*, but very often it was growing independent of the foster plant entirely. Sometimes the attachment was on the main roots, often on the lateral rootlets, generally one specimen in a place, but in one instance eight specimens were growing on a single clover root. The purple appearance of the flowers was very manifest, but one robust plant attracted my attention by its yellowish color; this on examination I found to be attached to the roots of Wild Carot, *Daucus Carota*. This specimen, according to DeCandolle, is *Orobanche minor*, var., *flavescens*, at one time regarded as a distinct species, under the name of *Orobanche Carota*. One week later I collected a specimen on the deposits of ballast at Camden, N. J., growing on *Trifolium repens*; this is the first instance of a parasitic plant occurring on our ballast grounds.

At a recent meeting of the Botanical section of the Academy of Natural Sciences of Philadelphia, considerable discussion was had, as to the manner of the attachment being formed, whether the seed germinated near the surface of the ground, and sent a radicle downward until it reached a root to cling to, or whether the attachment was made while the root was near the surface, and carried into the ground in some other way. On a second visit to the locality, I collected a specimen that seemed to illustrate the case, as the clover root, at a depth of three inches below the surface of the ground, had on it an abundance of the roots of the *Orobanche*, attached, so as to resemble moniliform bulblets, or in a diminutive way, strings of onions. These were examined under the microscope and the tissues of the two plants were found to be so closely interwoven, as to render it uncertain as to the point of union. In this case it was evident that the attachment was made under ground, as the growth of the root of the clover would be from the extremity, and consequently could not carry such a substance from the surface of the ground downward.

This species (whether it is so in all I cannot say,) has an enlargement or thickening of the base of the stem, sometimes an inch in diameter, and somewhat in appearance, like the corm of the Indian Turnip, with the little fascicle of roots coming out at the side instead of at the bottom part. It is not unlikely that these may retain sufficient vitality to preserve the plant over winter, as many specimens showing no attachment to the roots of any other plant were attached in a cluster around one of these thickened bases, the upper part of the plant having long since decayed. On cutting one of them open it was found to be as firm and solid as those of a growing plant.

Withering, in his Arrangement of British plants, speaks of this species as being "a destructive weed in Surrey and Essex, highly injurious to the clover crops." Whether it may become so in this country or not, only the future can determine, but no little anxiety and even alarm was felt in the neighborhood, when it became known what the plant was. A single specimen will produce sufficient seed to stock the whole neighborhood, and unless these hardened bases should be found to retain vitality for several years, the early mowing of clover fields will prevent its increase, and probably destroy it entirely.—ISAAC C. MARTINDALE, Camden, New Jersey.

A LIST OF SOME OF THE MOST INTERESTING SPECIES OF PLANTS COLLECTED IN THE INDIAN TERRITORY; BY GEO. D. BUTLER.—[concluded from p. 68.]

Liatris elegans, Willd. Sandy woods.

Liatris punctata, Hook. Dry prairie hills and sulphate flats.

Aster paludosus, Ait. Rich prairies, uncommon.

Aster sericeus, Vent. Sandstone ridges.

Aster anomalus, Engelm. Sandy woods.

Erigeron divaricatum, Mx. Roadsides.

Erigeron tenne, T. & G. Sulphate flats; common.

Chaetopappa asteroides, DC. The smallest plant of my acquaintance in this family, and the earliest in bloom. The ligulate flowers are curled back soon after opening. Sandstone hills.

Amphicheyris dracunculoides, DC. The tough, elastic stems and branches make good brooms. Yards, common.

Grindelia lincolniata, Nutt., var. *latifolia*, Engelm. Stem low and simple or sparingly branched (sulphate flats), or tall and widely branched (fields and fence rows); heads large; leaves elliptical, sessile, cuspidate, serrate.

Chrysopsis villosa, Nutt. Sulphate flats.

Heterotheca scabra, DC. Fort Smith.

Silphium scaberrimum, Ell. Low prairies.

Engelmannia pinnatifida, T. & G. Limestone.

Iva ciliata, Willd. Wet places.

Iva angustifolia, Nutt. Sulphate flats.

Rudbeckia alismifolia, T. & G. Prairies, common.

Dracopis amplexicaulis, Cass. Wet prairies.

Helianthus lenticularis, Dougl. Fields, introduced.

Helianthus rigidus, Desf. Prairies.

Helianthus mollis, Lam. Prairie knolls.

Coreopsis aristosa, Michx. Low prairies.

Coreopsis lanceolata, var? Every way larger, especially the darker colored achenes. Limestone cliffs.

Coreopsis tinctoria, Nutt. Very common.

Coreopsis grandiflora, Nutt. Prairies, common.

Coreopsis discoidea, T. & G. Pools, on *Cephalanthus*. During the rainy season when the pools are well filled with water, the floating seeds lodge against the *Cephalan-*